

is plausible that a determined patient can influence the decision in favour of surgery, it is also plausible that the same patient could successfully resist surgery that is recommended by the specialist.¹⁹ Similarly, increased rates among the more advantaged groups could be the result of differential selection by consultants or general practitioners or both and may not be evidence of direct patient involvement in, or influence on, the decision making process. Further research is clearly required before the relative influence on surgical rates of morbidity and clinical judgment, demand and supply, can be satisfactorily measured and the observed variations explained.

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St Catherine's College Seminars

The Warnock report

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The terms of reference of my inquiry were: "To consider recent and potential developments in medicine and science related to human fertilisation and embryology; to consider what policies and safeguards should be applied, including consideration of the social, ethical, and legal implications of these developments; and to make recommendations." Some general problems were posed by these terms of reference—for example, how widely were we to cast our net? What counts as a "potential" development? What in the future will still count as an "implication" of the use of new techniques? But we were first and foremost aware of the last injunction, to make recommendations. And so to some our report has seemed to be short on imagination and long on pragmatism. I would not dispute this judgment. It seemed to us the way we were obliged to go if we were willing to undertake the inquiry at all.

Another feature of the terms of reference was the distinction contained in them between medicine and science. While not believing that any such distinction could be exact or final, and while fully aware that advances in medicine must rely on advances in science, we nevertheless found it useful to divide our work into two

parts, roughly following this distinction. We thus dealt, firstly, with problems related to the treatment of infertility and, secondly, with questions related to research. I will concentrate as far as possible on the second half of the report, which, though less exciting to the press and other media, is in my opinion by far the more important part. When we came to the question of research the problems facing the committee of inquiry were fundamental; and a solution to them, of some kind or other, needs most urgently to be found if we are to be able to plan for the future in certain extremely important areas of medicine.

Use of embryos in research

A first general point to be made is that there is a great danger at present that the issues, being difficult, will be widely treated as easy—indeed, as a matter of rhetoric. There are those who appeal to moral principles in the matter of research without really thinking very clearly whether these principles, if adopted, would or would not preclude the use of early embryos in research programmes. And since it is always more agreeable to think in simple than in complicated terms, and since moral indignation is one of the most delightful of passions to indulge in, I believe that there is a real danger that the indignant will win the day and all research using human embryos will be brought to an end. Those who believe in the need for this research have a duty to argue their case as widely, but also as intelligently, as possible.

The second general point is that, as the law stands at present, human embryos, whether in vivo or in vitro, are not fully protected

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by law. There is, however, a certain retrospective recognition of their legal rights, in that if a child is born damaged by an injury brought about by negligence to it at an embryonic or fetal stage of development, then in certain cases damages may be claimed. But even here it could be argued that it is the child not the embryo who is protected. Again, though an embryo has no right to life in law, the Abortion Act and the Infant Life Preservation Act protect a fetus capable of being born alive. Even so, it is plain that those who claim that any embryo fertilised in vitro has a right to be implanted in a uterus, because it has a right to life, are talking not about present legal rights but about moral rights. They would have the law changed in order to give the newly fertilised embryo a right that it does not at present possess.

Arguments for research

The inquiry was divided on the question whether or not research using human embryos should be permitted, and those who argued that it should rested their case on two premises. The first was that the embryo immediately after fertilisation is at such a very primitive stage of life that, although indubitably alive and indubitably in some sense human, it is not as continuous with any human individual who might result if it were implanted as to warrant treatment as a full human being. The second premise was that there are advances in science and medicine that could not be made if this research was prohibited and that these advances would greatly benefit full human beings both now and in the future. The argument in effect amounted to this: in a calculation of harms and benefits the very early embryo need not be counted.

It is important to notice that the inquiry did not rest its case on the proposition that the very early embryo could feel no pain and, therefore, need not be weighed in the balance against the manifest advantage to the rest of humanity. This argument, though put forward by, for instance, Dr R G Edwards of Bourn Hall, was, we thought, inadequate for two reasons. Firstly, these embryos are to be destroyed; and, generally, destroying something is seen as causing it harm—indeed, often the worst kind of harm there is. Secondly, if the criterion for the use of human material for experimental purposes was the experiencing or non-experiencing of pain, then it might be possible to argue that any human might be used provided that he was anaesthetised. Humans would then be in the same boat, with regard to experiments, as other animals. (Usually those who consider that humans and other animals ought to share the same boat conclude from this that other animals should not be used, not that humans may be.)

Arguments against research

The three members of the inquiry who argued, in a minority report, that the human embryo should never be used also had two arguments. (It is of great interest to notice that these arguments are not the arguments most commonly used by the prohibitionists. It has been suggested that this shows that the committee was specially rigged to contain no serious opposition of research. I believe, on the contrary, that it shows simply how discussion in a calm atmosphere and between people who are in possession of the facts can temper views on either side of a deep divide.)

The two arguments of the prohibitionists are derived, firstly, from the consideration of the proper moral status to be accorded to the human embryo and, secondly, from the consequences of permitting limited research on embryos, such as the majority of the inquiry recommended. The first argument is based on the belief that the human embryo has a potential to become a human being, provided that it is implanted in a uterus. Therefore, it is wrong, when an embryo has been brought into existence in vitro, that it should be deprived of its chance to develop. A distinction is drawn between the sense in which an embryo is a potential human being and the sense in which ova or spermatazoa are potential human beings. It is here, I believe, that the weakness of this argument resides. To be potentially something or other means that you may be

that something or other, provided that certain conditions are fulfilled. It is not obvious to me that this entails that these conditions ought always to be fulfilled or that everyone has a moral obligation to fulfil them. It is an argument that actually, though disguisedly, rests on certain assumptions with regard to human life. But if so there seems no reason to distinguish between the embryo, which must be implanted if it is to have a chance to live, and the semen, which must be brought together with the ovum if it is to have a chance to live. Yet we do not believe it is immoral to allow semen no such chance.

The second argument of the minority, based on consequences, is that if it were allowed that limited research should take place using human embryos then it is certain that these limitations would be eroded. So even if the minority could be persuaded that the early embryo did not need total protection, they would not accept research on the grounds that gradually the protection for the later embryo would be eroded, the time limit on research being gradually extended.

Recommendations

The inquiry recommended that research should be permitted on human embryos only up to 14 days from fertilisation, since we were all agreed that some limit was necessary and that the present state of the law was unsatisfactory. Most scientists, and certainly all of those who were members of the committee and most who gave us evidence themselves, wanted some limit to be placed on the time that an embryo could be kept alive in vitro.

A majority of the committee, but a smaller one, also recommended that it should be permissible to fertilise donated eggs and semen specially for the purpose of research and not confine research to so called "spare" embryos. There were several reasons for permitting this. Firstly, the major decision of principle was, in my opinion at least, whether or not to permit research using human embryos at all. If this research was permitted to proceed, then the origin of these embryos was a matter of less importance. But there were two further considerations. Firstly, if research is to continue it must be valid scientifically; if only spares were to be used, especially with an increase in the practice of freezing embryos for later implantation, there would be too few embryos to allow valid conclusions to be drawn. Secondly, there would be an overwhelming temptation for doctors to give more and more effective drugs to cause superovulation, so that more and more eggs could be harvested and thus more embryos could be produced, some of which would count as spare. Who would want to implant 15 or more embryos or even store them all for future use? These embryos might be technically spare but would in fact have been brought into being for the sake of research. The distinction between spare and deliberately brought into being would disappear. In the general furore about research this issue seems temporarily to have been lost sight of.

Regulation

To return to the main issue. What has been generally agreed is the need for legislation. The majority view is that research needs to be regulated. The concept of regulation is very familiar to us in this country, less so in the rest of Europe or in America. One topic of regulation here is in broadcasting, where regulation has long seemed an acceptable way of combining a degree of freedom with ultimate protection of society from the worst excesses of such freedom. Another subject, which provides a closer analogy, is in our use of animals for research. In both these cases the essential instrument of regulation is a body, either statutory or set up by an Act of Parliament, which has overall responsibility for the control demanded but is independent of government and is composed not solely of experts or specialists but to a great extent of lay members of the public who are interested, in the sense of being concerned, but who have no commercial or scientific axe to grind. For experiments using live animals, the body in question (which I hope will become a statutory body under new legislation next year) issues licences to

people who wish to use animals and must issue a new licence for every new research project. Licensees must justify their use of animals and persuade the licensing body that the results looked for could not be reached without these animals. There is an inspectorate whose task it is to ensure licence conditions are not breached. Withdrawal of licences does in fact occur; and besides that, gross maltreatment of animals is a criminal offence and the perpetrators can be prosecuted under a separate Act.

There are difficulties and loopholes in the law on animal experimentation with which many of you may be as familiar as I, and I will not go into details. Nevertheless, the regulatory system works pretty well. I believe that it is of the utmost importance that a similar system shall come into being and be made to work in the regulation of research that uses human embryos. There must be a system of licensing, and lying behind it, to prop it up, the full force of the criminal law, which would make it a separate and non-technical offence to keep an embryo alive in vitro for longer than 14 days. The inquiry also suggested that the criminal law should be invoked to prohibit certain specific procedures other than merely keeping an embryo alive in vitro—such as the implantation of a human embryo into an animal of another species.

The discussion

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The discussion after Baroness Warnock's paper has been summarised as follows:

In the discussion that took place after the first St Catherine's seminar (see *BMJ* 13 July, p 121-4), Enoch Powell was mentioned, incidentally, for his role in initiating the policy of moving the mentally ill and mentally handicapped out of the large asylums. The discussion that followed this second St Catherine's seminar paper was dominated by the knowledge that his Unborn Children (Protection) Bill was about to be debated in the House of Commons.

Facts about the embryo

Supporters of research on embryos were first to join in the debate, pointing out the natural "waste" of embryos. For example, 60% of embryos did not get beyond implantation, and 10% of pregnancies miscarried. Research on embryos might lead to improvements in understanding successful reproduction; improved treatment of infertility; better methods of contraception; and (in the long term) a better understanding of the origins of diseases like muscular dystrophy, Down's syndrome, and cystic fibrosis.

The Warnock recommendation had been that research on embryos up to 14 days should be allowed under licence. The debate later polarised between those who wanted no research at all and those who argued that there should be no set limit. The embryo in vitro, it was explained, cannot be implanted in the uterus after 6-7 days. After that time it becomes disorganised into a fragmenting and formless tissue mass. Thus the embryo becomes less and less "human." This, however, was the present situation, which would in all probability change with advances in technique, raising the question of whether regulation or law should take account of the present or potential stage of scientific development. Baroness Warnock gave here the example that when the report was first considered the freezing of embryos and their reimplantation were

not yet successful; they became so a few months before the report was written. This led to the speculation that the junction of two kinds of research could be envisaged—that which kept embryos alive in vitro for longer periods of time might meet that which kept previously less mature newborn infants alive.

It had been assumed that the reason for choosing 14 days as the cut off point for research was that this marks, in the normal embryo developing in utero, the formation of the primitive streak, thought to be the antecedent of the nervous system. Those arguing against this cut off suggested, however, that as embryo development varied in vitro it was wrong to build into regulations concerning the embryo in vitro a model of development taken from normal development, and set against a fixed time scale based on the erroneous belief that the longer the embryo is kept alive the nearer it gets to becoming a human being.

Status of the embryo

To one philosopher, arguments based on the wonderful results science would achieve if it did certain things were unconvincing; for example, experiments on human prisoners could have useful research results but were clearly unacceptable on moral grounds. But were the ethical arguments against embryo research convincing? And was the human embryo a human being? The fact that this was not seen as an appropriate question for the Warnock committee did not prevent the participants at the seminar from debating it at length.

Was the 14 day embryo identical with the human being it would potentially represent if allowed to develop? Might the answer be that human personal identity depends on the brain? Brain death is accepted as death. It was therefore argued that if human identity depends on the brain, and if the 14 day human embryo does not have a brain, there is no argument against experiments before then. It was to act as a block to the slippery slope argument that the Warnock report had recommended that research should be licensed only up to 14 days.

The discussion also covered the idea of the potential to become a human person. If there was no difference in principle between the embryo on the one hand and the egg and sperm on the other, why should the embryo have a special status not accorded to gametes in